

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
21 July 2005 (21.07.2005)

PCT

(10) International Publication Number  
**WO 2005/065048 A2**

- (51) International Patent Classification: Not classified
- (21) International Application Number:  
PCT/IN2005/000006
- (22) International Filing Date: 6 January 2005 (06.01.2005)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:  
012/CHE/04 7 January 2004 (07.01.2004) IN
- (71) Applicant (for all designated States except US):  
**WHEELS INDIA LIMITED** [IN/IN]; Padi, Chennai 600 050 (IN).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **SRIVATS, Ram** [IN/IN]; Wheels India Limited, Padi, Chennai 600 050 (IN). **JAYARAM, S.** [IN/IN]; Wheels India Limited, Padi, Chennai 600 050 (IN).
- (74) Agents: **BALASUBRAHMANYAM, Lakshmi et al.**; Corporate Law Group, 1106-1107, 11th Floor, Kailash Building, 26 K.G. Marg, New Delhi 110 001 (IN).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- Published:**  
— without international search report and to be republished upon receipt of that report
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: WHEELS OF UNITARY CONSTRUCTION AND METHOD OF MAKING SAME

(57) Abstract: This invention relates to a unitary steel wheel as well as an apparatus and method for producing a unitary steel wheel. The unitary wheel comprises rim and disc components. In one embodiment, the unitary wheel further comprises approximately a 50 taper bead-seat for flat or semi-drop cantar rims, produced from a generally circular steel blank. The blank preferably has a cantar hole of predetermined size. In a first step, the blank is initially placed in a spinning machine to form disk and rim portions of a predetermined profile and shape. The preform is further spun and flow formed in the spinning machine, to form a gutter, well, bead-seat, and/or fixed flange. The preform is then forward and reverse spun to form the final profile and shape of the gutter, wall, bead-seat, and/or fixed flange.



WO 2005/065048 A2